

INSTRUCTIONS

*for*

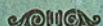
$2\frac{1}{4}$  x  $2\frac{1}{2}$

*National*  
**GRAFLEX**

Series II

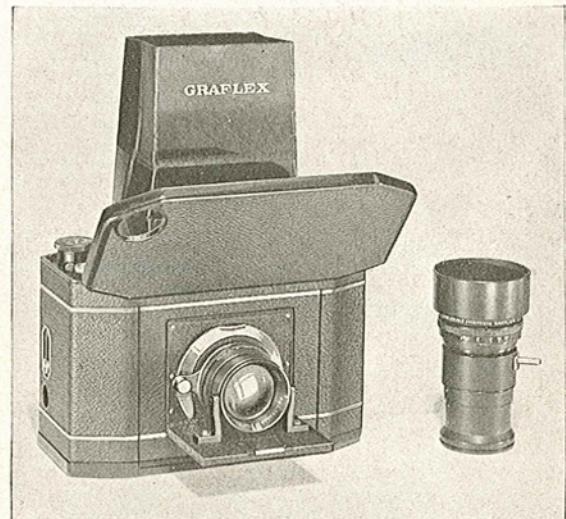
*with*

**Telephoto Lens**



Made in U. S. A.

**FOLMER GRAFLEX CORPORATION**  
ROCHESTER, NEW YORK



## INTRODUCTION

The National Graflex Camera Series II incorporates features made possible by more than 30 years of practical experience by Graflex in the manufacturing of precision cameras. Its design enables anyone to make keepworthy photographs regardless of previous photographic experience.

Carefully following the instructions in this booklet will make it possible for you to gain maximum satisfaction from your use of this camera.

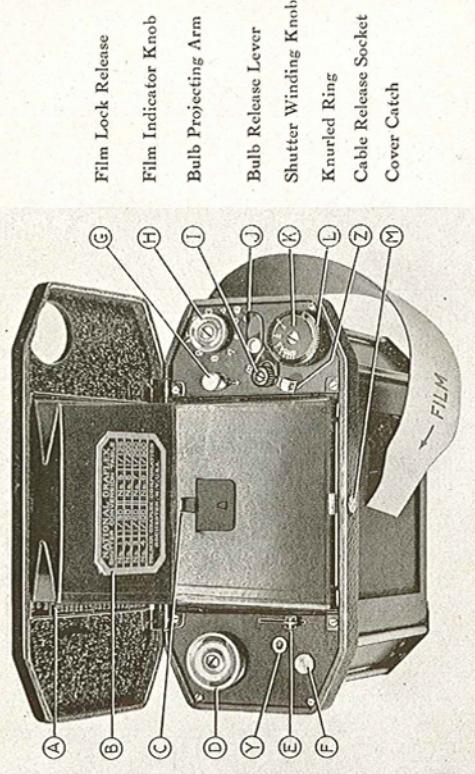


FIGURE 1.

# Instructions for Using the *National GRAFLEX*

## I. LOADING THE CAMERA

Open cover by pressing the Cover Catch Button M (fig. 1). When the cover opens, the focusing hood automatically erects itself.

Pull Bulb Release Lever J (fig. 1) to make sure shutter is released. Close cover. Slide the Bottom Catches W to "O" (open), (fig. 2).

Separate inner from outer case as shown in fig. 3. Open cover.

Insert roll of film into film chamber under H (fig. 1) so that slot in end of spool is engaged in key. Note: Lower spool supports are swung out of way when inserting and removing spools.

Insert empty spool in spool chamber under Winding Knob D (fig. 1) so that the slot engages properly.

Remove sticker from film. Holding Film Release G (fig. 1) in direction of arrow, unroll sufficient film to reach take-up spool. Thread into long slot with film leader spaced evenly between flanges. Turn the Winding Knob D until the film tightens.

Place the bottom case back on the camera, making sure that it is seated against the top. While pressing the bottom firmly into place, slide the Catches W toward "C" (closed). Open ruby window by Sliding Button Q (fig. 2) upward.

While holding Film Release G in direction of arrow, wind the film with Knob D until number 1 appears in the center of the Ruby Window R (fig. 2). Close ruby window slide.

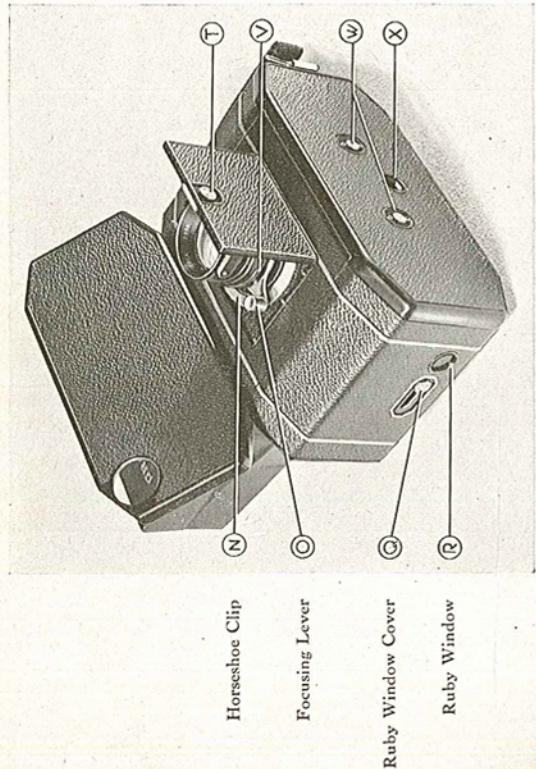


FIGURE 2.

Bottom Catches  
Tripod Socket

Door Catch  
Diaphragm Ring

Horseshoe Clip  
Focusing Lever  
Ruby Window Cover  
Ruby Window

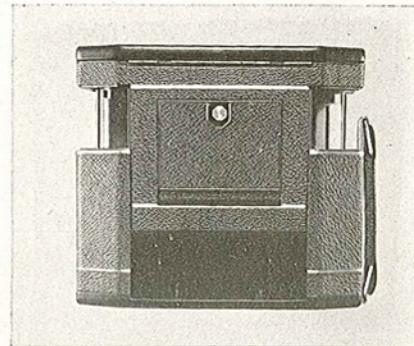


FIGURE 3. SEPARATING THE CASES.

Holding the Release G toward arrow, pull up on the Indicator Knob H (fig. 1), permitting it to turn freely until the pointer is just clear of the starting position S toward the number 9. Release G and turn Film Winding Knob D until the film tightens. The film is now in position for the first exposure.

## II. GETTING READY TO TAKE THE PICTURE

Open lens door by sliding the Lock Button T downward and pulling outward. See that lens door swings downward to firm position.

Open top cover by pressing inward on Cover Catch M.

Set mirror to focusing position by moving lever E toward the back of the camera.

See that the dot on the Bulb Control I is located nearest "I" (instantaneous).

*Because of the increased sensitivity of present day films it is advisable to fold down the hood when winding*

the shutter. This also makes the film winding knob more accessible.

Wind shutter by turning shutter winding knob K clockwise as far as possible.

Set shutter to the desired speed by lifting upward on Knurled Ring "L" and permitting it to drop into position when the dot is opposite the chosen speed number.

## USING THE NATIONAL GRAFLEX EXPOSURE GUIDE

Note: Exposure Guide is readily visible when hood is held in folded position.

Select from the five groups under "Description of Picture" the classification which best describes the subject to be photographed. Set the slider with its left edge at the hour of day opposite the line indicating the group of months in which you are making the picture.

The Exposure guide classifies light conditions into three groups which may be described as follows: If the sky is clear and there are very dark shadows, it is considered Bright. If there are light clouds or haze and the shadows are gray or transparent, it is Hazy. When the sky is overcast and there are no well defined shadows, it is Dull. If it is raining or very dark clouds fill the sky, good pictures may sometimes be made by allowing double that exposure indicated for "Dull," i.e., where No. 4 is directed, use No. 2.

Select the prevailing light condition, "Dull", "Hazy", or "Bright". In the horizontal row of numbers in the windows opposite description of picture and the kind of daylight available you will find the correct shutter speed number for each of the lens diaphragm settings indicated directly above at the top of the slider.

*Example:* If the subject to be photographed is a person standing in the shade; the time is 3 P.M.; it is a day in July; the light condition is "Hazy";

| TIME<br>OF<br>DAY | SET THIS SLIDER TO THE TIME OF DAY<br>OPPOSITE THE MONTH GROUP<br>FIND THE NUMBER UNDER THE DAY<br>SELECT CORRELATED NUMBER<br>SEE TABLES FOR EXPOSURE |        |     |     |     |      |      |     |     |     |     |     |
|-------------------|--|--------|-----|-----|-----|------|------|-----|-----|-----|-----|-----|
|                   | JAN  | FEB    | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
| AM                | 9  | 10     | 11  | 12  | 1   | 2    | 3    | 4   | 5   | 6   | 7   | 8   |
| P.M.              | 7  | 8      | 9   | 10  | 11  | 12   | 1    | 2   | 3   | 4   | 5   | 6   |
| DAY               | AM   | 6      | 7   | 8   | 9   | 10   | 11   | 12  | 1   | 2   | 3   | 4   |
|                   | PM   | 6      | 5   | 4   | 3   | 2    | 1    |     |     |     |     |     |
|                   | <b>DESCRIPTION OF PICTURE</b>  |        |     |     |     |      |      |     |     |     |     |     |
|                   | FIGURES IN DEEP SHADE OR DARK STREETS. VIEWS IN SHADY WOODS. DARK OBJECTS-BUILDINGS ALSO SUBJECTS NEARER THAN 5 FEET.                                  |        |     |     |     |      |      |     |     |     |     |     |
|                   | PORTRAITS OUTDOORS IN SHADE OR WITH DARK BACKGROUND. LIGHT BUILDINGS, OPEN STREETS LANDSCAPES WITH DARK TREES.   |        |     |     |     |      |      |     |     |     |     |     |
|                   | VIEWS, GROUPS, LARGE FIGURES IN OPEN, SNOW SCENES WITH DARK FIGURES. LANDSCAPES WITH LIGHT FOREGROUND.   |        |     |     |     |      |      |     |     |     |     |     |
|                   | SEMITDISTANT VIEWS IN THE OPEN, NEARBY VIEWS ON WATER OR WHITE SAND AND DISTANT DARK MOUNTAINS OR FORESTS.   |        |     |     |     |      |      |     |     |     |     |     |
|                   | DISTANT VIEWS, LIGHT MOUNTAINS, SNOW SCENES, OPEN BEACHES AND FOR OPEN WATER & SKY ADD 1 (SEE TABLES FOR MOVING OBJECTS)                               |        |     |     |     |      |      |     |     |     |     |     |
|                   | <b>F. NO 22 16 11 8 5 6 4 3 5</b>  |        |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |
| DULL              | HAZY   | BRIGHT |     |     |     |      |      |     |     |     |     |     |

FIGURE 4. THE EXPOSURE GUIDE.

the proper exposure is determined as follows:

1. The subject is classified in the second group under "Description of Picture."
2. It will be noticed that "July" appears in the lowest of the month groups.
3. The slide is set with the left edge at "3 P.M." in the bottom row of figures opposite "Time of Day."
4. Using lens diaphragm setting f.8, shutter speed No. 2 will give the correct exposure. (This you will find in the "8" column, directly opposite the "Hazy" adjoining your chosen picture subject group.)

The speeds, expressed in whole numbers on the exposure guide and shutter setting knob, are converted to fractions of seconds on the table attached to the focusing hood.

Where there is no motion in the subject, select from the guide the lowest possible speed number and use the correlated "f" number indicated on guide

directly above. This is the procedure for most pictures.

The Exposure Guide is calibrated to Verichrome or films of equal speeds such as Panatomic. When using Super-Sensitive Panchromatic film, allow for its greater speed by adding one number to the Guide readings for mid-day use, and two numbers to the readings for use early or late in the day.

*Example:* When using Super-Sensitive Panchromatic films, if the Guide calls for Shutter Speed No. 2, use Shutter Speed No. 3 at mid-day or speed No. 4 early or late in the day.

Shutter Speeds applicable for action pictures are provided on page 16.

Allowances to be made when National Graflex filters are used are shown on pages 20-21-22.

If you have any questions relating to the use of films other than those treated herein, or regarding the use of the National Graflex Exposure Guide in different latitudes, you are invited to write our Service Department.

### FOCUSING

Bring the concealed magnifier into position in the focusing hood by pressing downward on Magnifier Control C (fig. 1).

With the lens wide open, focus on principal object of interest by moving focusing lever O (fig. 2) up or down until the object appears sharpest on the ground glass.

Fold down magnifier.

Set lens diaphragm V (fig. 2) at predetermined "f" number.

Compose picture on ground glass.

### III. MAKING THE PICTURE

Holding the camera firmly, press Mirror Release Button F all the way downward. This releases both the mirror and shutter.

A cable release threaded into cable release socket Y (fig. 1) may be used. Depressing the plunger will cause the exposure to be made. A self-timing device, if attached to the cable release, will delay the exposure permitting the operator to be included in the photograph.

### IV. GETTING READY FOR NEXT PICTURE

Reset mirror to focusing position by moving Lever E toward the back of the camera.

Release the film lock by sliding Button G in the direction of the arrow. Then release it.

Turn Film Winding Knob D clockwise until, without strain, it turns no further.

(Automatically the pointer on the film meter, has turned and is now pointing to the number of the next picture to be made. For the tenth and last picture it will again point to "S.")

### V. CLOSING THE CAMERA

First: SEE THAT THE MIRROR IS SET IN FOCUSING POSITION (KNOB E BACK FIG. 1). Release the shutter by pulling Bulb Release Lever J (fig. 1). Be sure that Magnifier is folded down before closing hood. Close down the hood by pressing at the sides near the base and fold top toward back of camera. Close the cover.

Second: To close the lens door, turn focusing lever O (fig. 2) to lowest position, and swing lens door upward into locked position.

### VI. UNLOADING THE FILM

When the Indicator hand returns to "S," film is in position for the last exposure. Following this exposure, hold the Film Release G toward arrow, and

turn the winding knob D until the film is completely wound on the take up spool.

Turn film winding knob several revolutions after film indicator knob stops turning.

Removing the lower case, take out the exposed roll. Fold the end of the film trailer and paste the sticker around the roll.

## VII. MAKING BULB EXPOSURES

(Use Tripod or other firm support. See Page 26)

To make pictures under unusual light conditions, not covered by the Exposure Guide, the procedure is as follows:

### BULB EXPOSURES

See that mirror is set in focusing position before (1) changing the position of the I-B knob or (2) winding the shutter.

Set camera on firm support.

Judge the duration of exposure required. (Since this depends on variable factors, fixed rules cannot be given).

Set mirror.

After winding shutter, set to No. 1.

Fold down the focusing hood and hold down with left hand. Turn the Bulb Control Knob I counter-clockwise so that the dot is located nearest "B" (Bulb).

Focus.

Set diaphragm to desired "f" number.

Press down on mirror release button F. (This will allow mirror to raise but curtain will not run down as for instantaneous exposures.) The camera is now ready for the exposure.

Open shutter by pulling toward the back of the camera on Bulb Release Lever J with index finger,

holding this lever back while counting off the time determined for the exposure. At the expiration of desired time terminate the exposure by releasing pressure on lever J.

Note: When pulling back on lever J to start exposure, be careful not to hold the shutter winding knob K. Do not allow the lever to snap back at end of exposure, but release in a gentle, even manner.

A cable release threaded into cable release socket Z may be used for making bulb exposures. To make the picture, depress the plunger of the cable release for the duration of the exposure. Release the pressure on the plunger to terminate the exposure. The Self-Timer and Delayed Exposure Device supplied as an accessory for the National Graflex Series II Cameras provides exposures of controlled duration ranging from one-half second to ten full seconds. This accessory should be operated according to the instructions accompanying it.

Re-set mirror.

Wind film for next exposure.

To re-set for instantaneous use turn I (fig. 1) clockwise so that the dot is located nearest "I" (instantaneous).

Instantaneous "shots" at night: The fast f.3.5 lens and efficient focal plane shutter in combination with fast film, will capture excellent close-ups at night with only one photo flood lamp.

## VIII. LENSES

### The 75 mm. f.3.5 B & L Tessar

This National Graflex lens is of the Tessar Series IC type, made especially for this camera. To those who are familiar with lens qualities this will stand for the best.

The focal length is 75 millimeters. The speed is f.3.5.

## Depth of Field Table for 75 mm. f.3.5 B & L Tessar Lens

| Dis-tance of Object from Camera | Lens Diaphragm Settings |                 |                 |                |                |                |               |
|---------------------------------|-------------------------|-----------------|-----------------|----------------|----------------|----------------|---------------|
|                                 | f.3.5                   | f.4             | f.5.6           | f.8            | f.11           | f.16           | f.22          |
| Feet                            | 3' 10"- 4' 3"           | 3' 9"- 4' 5"    | 3' 7"- 4' 8"    | 3' 5"- 4' 11"  | 3' 3"- 5' 6"   | 3' 0"- 6' 5"   |               |
| 4                               | 5' 7"- 6' 5"            | 5' 6"- 6' 9"    | 5' 4"- 7' 0"    | 5' 1"- 7' 6"   | 4' 9"- 8' 4"   | 4' 4"- 10' 0"  | 4' 0"- 13' 4" |
| 6                               | 7' 5"- 9 0"             | 7' 1"- 9' 3"    | 6' 10"- 9' 10"  | 6' 5"- 10' 11" | 6' 0"- 12' 6"  | 5' 4"- 17' 0"  | 4' 9"- 29' 0" |
| 8                               | 8' 10"- 11' 8"          | 8' 8"- 12' 0"   | 8' 2"- 15' 0"   | 7' 7"- 14' 11" | 7' 0"- 18' 3"  | 6' 2"- 29' 2"  | 5' 5"- 99"    |
| 10                              | 10' 4"- 14' 6"          | 10' 1"- 14' 11" | 9' 6"- 16' 6"   | 8' 9"- 19' 9"  | 7' 11"- 26' 0" | 6' 10"- 56' 0" | 5' 10"- Inf.  |
| 12                              | 12' 9"- 20' 8"          | 12' 9"- 21' 7"  | 11' 10"- 25' 2" | 10' 8"- 35' 4" | 9' 5"- 56' 0"  | 8' 0"- Inf.    |               |
| 16                              | 15' 1"- 20' 8"          | 15' 2"- 28'     | 15' 10"- 36' 6" | 12' 5"- 57'    | 10' 8"- 180'   | 8' 10"- Inf.   |               |
| 20                              | 15' 9"- 28'             | 20' 4"- 58'     | 18' 0"- 93' 0"  | 15' 4"- Inf.   |                |                |               |
| 30                              | 21' 1"- 51' 9"          | 24' 5"- 112'    | 21' 1"- 400'    | 17' 8"- Inf.   |                |                |               |
| 40                              | 25' 8"- 98' 0"          | 30' 8"- Inf.    |                 |                |                |                |               |
| 60                              | 32' 7"- 380'            | -Inf.           |                 |                |                |                |               |
| 80                              | 38'                     | -Inf.           |                 |                |                |                |               |
| Hyp. F. Dist.                   | 71' 6"                  | 62' 6"          | 44' 8"          | 31' 2"         | 22' 8"         | 15' 7"         | 11' 5"        |

### DEPTH OF FIELD\*

The diaphragm settings are marked f.3.5, 4, 5.6, 8, 11, 16, 22. Each number from 5.6 to 22 designates an aperture approximately one-half as great as the preceding number. For example, f.5.6 is half as great as f.4 and about twice as great as f.8.

As may be observed through the focusing hood, the field in which objects are sharply defined deepens as the diaphragm opening is reduced. Depth of field at any diaphragm setting is that field in which all objects are sharply defined.

A table showing the exact depth of field for each diaphragm setting is found on opposite page.

On the ring, back of the focusing lever on your camera, are indicated three settings, namely 4, 8 and 16, each of which respectively refers to the lens diaphragm setting f.4, f.8 and f.16.

When the focusing ring is set at four and the lens diaphragm is set at f.4, the field in focus is from 32 feet to infinity.

When the settings 8 and 16 are used with their corresponding diaphragm "f" numbers, the depth of field from 16 feet to infinity and 8 feet to infinity respectively. This renders in effect universal focus performance, when customary focusing through the hood is impracticable.

### REMOVING THE LENS

Remove the lens and mount by lifting the nickel finished horseshoe clip N (fig. 2) directly back of the focusing lever free from the lens board. Note: Turn

\*Depth of field is often referred to as depth of focus.

Depth of Field Table for 140 mm. f.6.3 B & L Telephoto Lens

the focusing lever O (fig. 2) to lowest position before detaching lens.

## The 140 mm. f.6.3 B & L Telephoto

The use of the 140 mm. *f*.6.3 Telephoto lens gives an image on the film which is approximately twice as large as that obtained with the 75 mm. *f*.3.5 lens. This has the same effect as reducing the distance from the camera to the subject by approximately one half.

The lenses may readily be interchanged. Removing the nickeled horseshoe clip on the lens mounting door permits the removal of the regular lens. Note: Turn focusing lever O to lowest position before detaching lens.

The Telephoto lens is placed on the camera with the focusing lever on the left side when facing the camera from in front. Replace the nickeled horseshoe clip.

A depth of field table applying to the Telephoto lens appears on opposite page.

## CLEANING

Since dust will accumulate on lens, ground glass, and focusing mirror, it is desirable to occasionally clean the surfaces thereof. To facilitate cleaning, remove the lens and mount from the camera.

Light dust accumulations can best be removed by using a fine camels' hair brush.

To clean lens, breathe on the glass and wipe gently with a soft clean cloth, free from lint, or with lens tissue. *Do not* touch the surface of the lens elements with anything hard or rough.

Replace the lens in the camera by placing it with

## Table for Photographing Moving Objects

Use the EXPOSURE GUIDE to determine the correct diaphragm setting.

| Speed of Object    | Distance of Object from Camera |        |        |         |         |         |         |
|--------------------|--------------------------------|--------|--------|---------|---------|---------|---------|
|                    | 25 ft.                         | 50 ft. | 75 ft. | 100 ft. | 150 ft. | 200 ft. | 300 ft. |
| 2½ Miles per hour  | 2 3 4                          | 1 1 2  | 1 1 1  | 1 1 1   | 1 1 1   | 1 1 1   | 1 1 1   |
| 5 Miles per hour   | 4 5 6                          | 2 3 4  | 1 2 3  | 1 1 2   | 1 1 1   | 1 1 1   | 1 1 1   |
| 7½ Miles per hour  | 5 6 7                          | 3 4 5  | 2 3 4  | 1 2 3   | 1 1 2   | 1 1 1   | 1 1 1   |
| 10 Miles per hour  | 6 7 7                          | 4 5 6  | 3 4 5  | 2 3 4   | 1 2 3   | 1 1 2   | 1 1 1   |
| 15 Miles per hour  | 7 7 9                          | 5 6 7  | 4 5 6  | 3 4 5   | 2 3 4   | 1 2 3   | 1 1 2   |
| 20 Miles per hour  | 7 9 9                          | 6 7 7  | 5 6 7  | 4 5 6   | 3 4 5   | 2 3 4   | 1 2 3   |
| 30 Miles per hour  | 9 9                            | 7 7 9  | 6 7 7  | 5 6 7   | 4 5 6   | 3 4 5   | 2 3 4   |
| 40 Miles per hour  | 9                              | 7 9    | 7 9 9  | 6 7 7   | 5 6 7   | 4 5 6   | 3 4 5   |
| 60 Miles per hour  | 9                              | 9 9    | 9 9    | 7 7 9   | 6 7 7   | 5 6 7   | 4 5 6   |
| 80 Miles per hour  |                                | 9      | 9      | 7 7 9   | 6 7 7   | 5 6 7   | 5 6 7   |
| 120 Miles per hour |                                |        | 9      | 7 9 9   | 7 9 9   | 6 7 7   | 6 7 7   |
| 160 Miles per hour |                                |        |        | 9       | 9 9     | 7 9 9   | 7 9 9   |
|                    |                                |        |        |         | 9       | 9 9     | 7 7 9   |
|                    |                                |        |        |         |         | 9       | 7 7 9   |
|                    |                                |        |        |         |         |         | 9 9     |
|                    |                                |        |        |         |         |         | 9       |

\* Objects moving toward or away from the camera.  
 \*\* Objects moving toward or away from the camera at 45 degree angle.  
 \*\*\* Objects moving at right angles to the camera.

the slotted band in front of the guides and gently push it back so that the guide pins enter the slots. Replace the clip. Note: The focusing knob should be on the left side when facing the lens from in front.

## IX. THE FOCAL PLANE SHUTTER

The focal plane shutter is so called because it operates near the focal or picture plane, i.e., at the film instead of at the lens as other shutters do. This shutter consists of two curtains so arranged that they may be moved with respect to each other thereby providing changes in the shutter opening. These changes vary from an opening full picture width, to an opening a small fraction thereof. The shutter moves at the same velocity for all speeds and, through the varying aperture, provides a wide range in exposure time. The eight settings provided are numbered 1, 2, 3, 4, 5, 6, 7 and 9.

These shutter speed numbers showing on shutter winding knob K (fig. 1) correspond to those appearing on the exposure guide.

## SHUTTER SPEEDS

The individual shutter speed numbers have the following equivalents when expressed in terms of fractions of seconds:

- |             |             |
|-------------|-------------|
| No. 1—1/30  | No. 5—1/125 |
| No. 2—1/50  | No. 6—1/200 |
| No. 3—1/60  | No. 7—1/250 |
| No. 4—1/100 | No. 9—1/500 |

Added efficiency in your Graflex Focal Plane

Shutter has made it possible to provide this group of shutter speeds, all of which permit holding the camera in the hand without danger of movement. Operating in the closest possible proximity to the focal plane, and utilizing all the 1/3 added light obtained, this shutter assures *National GRAFLEX* users out-standingly sharp reproduction of both still and action subjects.

In photographing moving objects the motion table will assist you in determining what shutter speed number will be ample to arrest the action.

You will note in referring to the table that arresting motion depends on:

1. The speed with which the object is moving.
2. The distance of the object from the camera.
3. The angle in which the object is moving in its relation to the camera.

The "Table for Photographing Moving Objects," page 16, deals with each.

Having determined the shutter speed number, refer to the Exposure Guide for the "*f*" number which will permit the correct exposure.

## X. NATIONAL GRAFLEX ACCESSORIES

### NATIONAL GRAFLEX FILTERS

A full set of filters for National Grafex includes K-1, K-2, X-1, X-2, Sky Filter and Copying Attachment. A dust-proof, Morocco leather filter case is available.

The proper use of filters with the National Grafex enhances the photographs obtained through the introduction of correct tonal values. These tonal values add to the natural life-like qualities of the photograph by reproducing in different shades of gray the varied color brightnesses of the subject. These qualities combined with the brilliancy and crispness of National Grafex negatives further contribute to the superior results which lead to more interesting pictures.

Since photographic films are much more sensitive to blue than to other colors, color variation is not recorded with the same brilliancy as apparent to the eye, unless filters are used. A filter placed over the lens of the camera absorbs the predominating color and represents the various colors of the subject in the photograph by tones which correspond more nearly to the brightness of the colors as seen by the observer. For example, if the subject contains orange against a background of blue, a color filter, such as the National Grafex K-2, would absorb the blue sufficiently to cause the background to photograph darker than the orange. Without the filter the orange would photograph darker, and the blue lighter, than is apparent to the eye. The use of a filter, then, enables the film to reproduce the various colors of the subject more nearly in accord with their true tonal values.

The filters listed herein are the recognized Wratten type, especially selected for use with the National Grafex. The mount is so constructed that the filter may be readily attached or detached from the National Grafex lens with assurance of its being properly placed for maximum efficiency.

Our Service Department will be glad to supply further information relating to the use of National Grafex Filters in meeting specific requirements, upon request.

# National GRAFLEX Filters—Uses and Factors

The following table contains information relating to the use of specific filters with the National Grafex

| <i>Filter</i>   | <i>Function</i>  | <i>Uses</i>  | <i>Filler Factors</i>  |
|-----------------|--|--|--|
|                 |  |  | <i>Verichrome Daylight</i> <i>S.S. Pan. &amp; Panatomic Daylight</i> <i>Art. Light</i> |
| Sky             | Partially absorbs blue light rays present in the sky.  | Greater contrast between clouds and sky without altering exposure.   | 1    1   |
| K-1<br>*Aero #1 | Medium correction for violet and blue light rays.  | Cloud Effects, Beach Scenes, Mountain Vista, Pastoral Scenes.  | 2.5    1.5    1.5  |
| K-2<br>*Aero #2 | More complete absorption of violet and blue. Renders blue darker than K-1.   | Cloud Effects, Beach Scenes, Light Buildings against sky, Mountain Vista, Pastoral Scenes, Removing haze, etc. | 4.5    2    1.5  |
| X-1             | For Kodak Supersensitive Panchromatic or Panatomic Film. Reproduces all colors in correct tonal relation, in daylight. | For general photography with daylight.   | 3  |

|     |   |   |                |
|-----|---|---|----------------|
| X-2 | For Kodak Supersensitive Panchromatic or Panatomic Film. With tungsten light reproduces all colors in correct tonal values. | For general photography using tungsten light (Photoflood Lights, etc.)                          | 4              |
| G   | Absorbs more of the violet and blue, and renders blue darker, than does the K series.                                       | Cloud effects, general beach scenes, mountain vistas. Almost completely eliminating haze, etc.  | 10    2.5    2 |
| A   | Absorbs all violet, blue and blue green. Renders blue as very dark and yellow and orange as white.                          | Striking cloud effects, distant scenes, completely eliminates haze.                             | 4.5    2.5     |
| F   | Absorbs all violet, blue and green. Renders blue as black and yellow, orange and red as white.                              | Used for "moonlight" effects, producing pure white clouds against black sky. A contrast filter. | 8    4         |

Note: The National Grafex sun shade used with filters is also a great help in securing negatives with clear sharp detail.

Filters for the 163—140mm Bausch & Lomb Telephoto lens are available to fit into the sun shade incorporated in the front of this lens. Filter factors same as above.

\*Aero Filters are more helpful in aerial photography and in reducing land haze.

TABLE NO. 2

USE OF FILTERS WITH NATIONAL GRAFLEX EXPOSURE GUIDE  
 The vertical column at the extreme left contains the shutter speed numbers given by the Exposure Guide. In the horizontal columns opposite each of these numbers appear the shutter speed numbers which should be used with the combination of film and filter given directly above, e.g., if the Exposure Guide gives shutter speed No. 7, when using a K-2 Filter and Verichrome film, the shutter speed number to be used is number 1.

| Shutter Speed Number Given by Exposure Guide | Sky Filter                | K-1                       | K-2 Color Filter          | X-1                       | X-2                       |
|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|  | S.S. Pan-<br>amic<br>Pan. |
| 1  | 1                         | 3                         | 1                         | 2                         |                           |
| 2  | 2                         | 4                         | 2                         | 3                         | 1                         |
| 3  | 3                         | 5                         | 3                         | 4                         | 2                         |
| 4  | 4                         | 6                         | 4                         | 1                         | 5                         |
| 5  | 5                         | 7                         | 5                         | 2                         | 6                         |
| 6  | 6                         | 6                         | 3                         | 7                         | 5                         |
| 7  | 7                         | 9                         | 7                         | 4                         | 6                         |
| 9  | 9                         | 9                         | 6                         | 4                         | 9                         |

Note: When taking photographs with filters under conditions such as tungsten light, not covered by the Exposure Guide, please refer to filter factors given in table No. I.

## National Graflex Lenses and Accessories

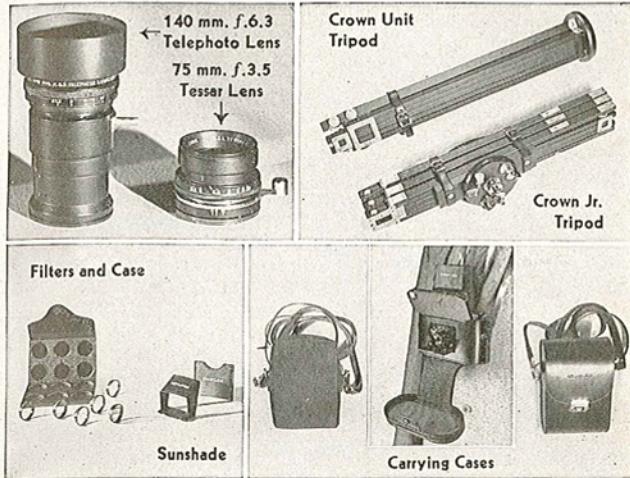


FIGURE 5.

## THE COPYING ATTACHMENTS

These handy devices permit the photographing of subjects lying quite close to the camera and are easily slipped over the front of the Bausch & Lomb Tessar lens.

The 18" attachment permits the filling of the entire picture area with a head and shoulders portrait. A 12" attachment may be used for photographing subjects that distance from the camera.

## SUNSHADE

This worthwhile accessory prevents the entrance into the lens of extraneous light. It folds and slips into its own flat leather case when not in use.

## SLOW EXPOSURE ACCESSORY

Exposures slower than 1/30 of a second can now be made with your National Graflex Series II Camera through use of the accessory self-timer. This accessory makes automatically timed exposures ranging from  $\frac{1}{2}$  to 10 full seconds. It can also be used as a self-timer allowing the operator to move in front of the camera and become a part of the scene being photographed.

## DIRECT VISION SIGHT FINDER

This is of the optical type and fitted with cross lines for the proper centering of the subject when sighted with the finder approximately three inches from the eye. When attached to the bottom of the camera, with the small screw fitting into the tripod socket, it permits making photographs over the top of nearby subjects. It is especially useful in a crowd. For prefocusing of the lens see page thirteen.

## CARRYING CASES

Although the National Graflex requires no carrying case, such an accessory affords added protection as well as convenience in carrying. There is available a choice of four distinct cases—each having its worthwhile features.

### The New Carry-All Case

The new Carry-All Case provides a convenient means for carrying the camera and all its accessories.

This case is made with compartments for the National Graflex Camera, Telephoto lens, an exposure meter, two filter cases, the direct vision sight finder, sunshade and slow exposure device as well as space for additional rolls of film. It is made of black sole leather, plush lined and supplied with lock, handle and shoulder straps.

### The "Sportsman" Case

The "Sportsman" positions the camera on the chest—at natural picture-making position—and permits using the camera *in the case*. (See fig. 5).

This case is made of black genuine leather; is plush lined; has an adjustable leather neck strap which can be quickly extended to permit carrying the case suspended from one shoulder; and completely encloses the camera for carrying.

### The Zippered Suede Case

Made of soft waterproofed tan suede, this case has proven a popular favorite. It folds for pocket carrying, and is complete with an adjustable leather shoulder strap.

### The Hard Leather Case

Made of black, genuine leather, and of rigid construction, this case meets a wide acceptance. Will withstand hard usage, and with its adjustable leather shoulder strap, is a great convenience.

## TRIPODS

Two light-weight tripods are now offered which are particularly adapted for use with your camera in making "bulb" exposures.

### Crown Unit Tripod

The Crown Unit Tripod is supplied as a complete unit, with the legs permanently attached to the tripod top.

This tripod is made of ebonized cherry, with nickel metal fittings. The length of the Crown Unit Tripod when closed is 18½ inches—44 inches when the two sections of the legs are fully extended. The top of the tripod is felt covered, with a diameter of 3½ inches.

### The Crown Jr. Tripod

The Crown Jr. Tripod, as supplied, includes three legs, a detachable top, and an ingenious carrying unit. It, too, is made of ebonized cherry, with nickel metal fittings. Its length closed is 17 inches; when extended, 44 inches. The tripod top measures 3¾ inches.

When the tripod is folded up for carrying, the legs are nested within the carrying unit—the top attaching to it by means of the camera clamp screw.

## THE COPYGRAPH OUTFIT

The Copygraph Outfit permits using your National Grafex in making photomicrographs, copies of charts, maps or books, as well as table top studies, just as you view them in the focusing hood.

For more information about this versatile outfit, see your nearby Grafex dealer . . . or write for a complete, illustrated folder.

## GRAFLEX Enlarg-or-Printer

Many times interesting picture possibilities are discovered in a section of a negative. An enlargement from a small negative section makes an interesting and "keepworthy" picture.

The Grafex Enlarg-or-Printer was designed to allow your using the National Grafex lens for making these interesting enlargements. With one compact unit you are provided with an enlarger, contact printer and retouching desk, almost a complete darkroom in itself. The compactness of this unit will be appreciated by those who are forced to work in a confined space. It requires no installation or setting up. It is always set to go.

Not only will the Grafex Enlarg-or-Printer accept your National Grafex negatives but will accommodate any negative ranging from 35mm to 2¼x3¼ or that section of a 4x5 negative.

The Grafex Enlarg-or-Printer will completely round out your enjoyment of National Grafex photography. Complete information on this versatile unit will be sent you upon request by our Service Department.

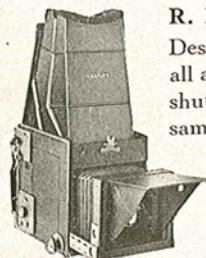
## Other Graflex Favorites

**Series B GRAFLEX:** Reliable, practical, popular. Focal plane shutter gives 24 speeds from 1/10 to 1/1000 second and any time desired. Kodak Anastigmat f.4.5 lens. Uses cut film, roll film, plates, film packs. Made in sizes  $3\frac{1}{4} \times 4\frac{1}{4}$ , 4x5, 5x7. Also made with Revolving Back— $2\frac{1}{4} \times 3\frac{1}{4}$ ,  $3\frac{1}{4} \times 4\frac{1}{4}$ , 4x5.

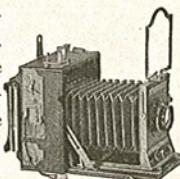


### R. B. Series D GRAFLEX:

Deservedly popular because of its all around utility and ability. Same shutter as Series B and provides same choice of film and plates. Removable lens board permits wide selection of lenses. Revolving Back is standard equipment. Made in sizes  $3\frac{1}{4} \times 4\frac{1}{4}$ , 4x5.



**SPEED GRAPHIC:** Approved and praised by Press Photographers. GRAFLEX focal plane shutter gets even the most difficult shots. Both direct vision and ground glass focusing. Accommodates plates, films, and film packs. Removable lens board to take regular or ultra fast lens and between lens auxiliary shutter. Made in sizes  $3\frac{1}{4} \times 4\frac{1}{4}$ , 4x5, 5x7.



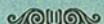
## Instructions for Cleaning the First Surface Mirror of National Graflex Series II Cameras

For increased effectiveness in focusing, this camera is fitted with a special first surface mirror producing a more distinct image on the ground glass.

The surface of the mirror is scientifically coated with a highly reflective aluminum compound, which retains its brilliancy in the absence of a protective coating. In order to insure maximum benefit from its use, care must be exercised in cleaning to guard against scratches from grit or other foreign matter. Loose dust may be removed by brushing with a tuft of clean cotton saturated with water. Any marks left by the drying liquid may be removed by condensing breath moisture upon the mirror and rubbing with cotton. The mirror should not remain wet for any prolonged period as water is likely to contain acid or alkaline which may slowly attack the aluminum.

## Our Service Department

We maintain a service department the facilities of which are available to you in solving any photographic problems which arise. You are invited to write us.



**FOLMER GRAFLEX CORPORATION**  
ROCHESTER, NEW YORK